



Scientist

Job Code: 2041

Originated: 08/2006

Revised: New

HR Ordinance Status: Unclassified

Salary Grade: 2156

EEO Code: 21

FLSA: Exempt

Supervisory: No

CLASS SUMMARY

The fundamental reason the Scientist classification exists is to conduct research studies on raw and finished water to detect and investigate unregulated compounds and contaminants, develop new or improved methods for the detection, quantification and analysis of compounds and to assess whether treatment processes will remove drinking water contaminants. Scientist's complete complex quantitative chemical and/or microbiological analyses requiring the application and interpretation of advanced professional, scientific principles and techniques.

DISTINGUISHING CHARACTERISTICS

The Scientist is an advanced professional/technical level in the chemistry class series. Incumbents develop and evaluate methods of contaminant detection and analysis, requiring full proficiency in the use and maintenance of complex, state-of-the-art instrumentation (GC, GC/MS, LC/MS, ICP/MS, Microscopy and Molecular Techniques) and the ability to use judgment to interpret data or test results/findings from analyses conducted.

A Scientist is distinguished from Chemist II in that Scientists utilize advanced instrumentation to conduct analyses and develop analytical methods in areas for which there are no standard EPA methodologies.

ESSENTIAL FUNCTIONS

Performs duties and responsibilities commensurate with assigned functional area within a department(s) which may include, but are not limited to, any combination of the following tasks:

- Applies advanced level technical knowledge and expertise to oversee the quality and performance of assigned programs, special projects and research activities.
- Conducts literature and application searches and reviews.
- Works with treatment personnel to develop short term and long-term scientific/research monitoring strategies.
- Maintains an active role in professional scientific and industry related groups.
- Operates complex, state-of-the-art instrumentation, such as GC/MS, LC/MS, ICP/MS, Real-time PCR and others, and associated data processing components using proper operating, maintenance and safety techniques.

- Researches and investigates newly identified contaminants found in raw and potable water, including wastewater and reclaimed water.
- Develops new or improved analytical methods to optimize the detection, quantification and analysis of target compounds and contaminants including the determination of detection limits.
- Performs quality control and assurance tests on newly developed methods to determine their effectiveness.
- Analyzes data and evaluates results to determine whether changes are needed in detection methods or instrument parameters.
- Prepares reports of research results and compiles standard operating procedures for new methods.
- Determines optimum instrumentation for research to be conducted; sets up multiple runs with increasing sensitivity parameters.
- Analyzes data and makes parameter adjustments.
- Troubleshoots and maintains instruments and assists other professional staff in the maintenance and operation of assigned instruments; evaluates instrument capability and makes appropriate adjustments or modifications to procedures; assists in developing methods for instrument operation and maintenance.
- Participates in the laboratory's quality-control program to ensure that methods, techniques and materials used to analyze water will give consistent, accurate and reliable results.
- Develops, updates and revises laboratory standard operating procedures for methodologies developed; develops new standard operating procedures to analyze new elements/compounds required by federal and state authorities; evaluates and revises existing chemical test procedures.
- Maintains logs and records of all lab work performed; prepares reports on all analyses and test results and their interpretations.
- Analyzes compliance and process samples as dictated by present and future regulations, including Drinking Water, Wastewater, Pretreatment and Superfund programs.
- Plans for future, expanded testing services and budget preparation.
- Participates in 100% peer data review.
- Maintains all Quality Control records for the work group in accordance with federal and state regulations and Laboratory Quality Assurance Manual.
- Provides technical support to other Water Resources personnel.
- Analyzes samples for microbiology, inorganic, and organic parameters per EPA and Standard Methods.
- Performs any required sample prep and any other miscellaneous duties.
- Prepares and/or submits compliance reports to meet requirements for the state and federal agencies.
- Interprets analysis results and informs Manager or proper agency if problem exists.
- Keeps current with all new methods, rules and regulations and implements new requirements.
- Responsible for the procurement of new instrumentation, service contracts or other professional service including RFP preparation and contract administration.

- Performs routine trouble-shooting and maintenance of instruments.
- Keeps maintenance records.
- Participates in annual state audit. Participates in audits of contract laboratories.
- Responsible for following and promoting all safety procedures.
- Performs other related duties as assigned.

MINIMUM QUALIFICATIONS

Knowledge, Skills and Abilities

Knowledge of:

Laboratory technique and protocols for chemical or microbiological analysis of water and wastewater samples.

Must know, understand and follow QC requirements for each analytical method. Theory, principles, practices, methods, chemicals and agents used in trace metals chemical and physical analysis and testing of water; water sample preparation methods; laboratory procedures for water analysis; methods and processes used in raw water treatment; federal EPA regulations and Safe Drinking Water Act; the operation and maintenance of applicable complex, laboratory instrumentation and related computer programs and software; programmable laboratory equipment; federal EPA methodologies; the use of standard laboratory glassware, beakers, flasks, pipettes, etc.; safe laboratory practices and procedures; quality control techniques.

Ability to:

Establish and maintain effective working relationships with co-workers, supervisors, and the general public.

Operate and enter data or information into a personal computer.

Prioritize own work tasks and complete work within specified time periods and deadlines.

Operate complex automated/programmable laboratory equipment in the inorganic and organic analysis of raw and potable water samples.

Apply principles and scientific methods to the development of new methodologies for identifying unregulated compounds and contaminants.

Calibrate, maintain and perform minor repairs on laboratory equipment.

Understand and carry out testing protocols.

Make complex mathematical calculations.

Prepare accurate reports and records of test results and special analyses; conduct original research.

Present scientific data clearly and concisely, both orally and in writing.

Provide guidance and direction to less experienced professional and technical staff.

Education and Experience

A Scientist must have five years of increasingly responsible chemical or microbiological laboratory experience, two of which focused on the utilization of

applicable complex instrumentation conducting water analysis and a Bachelor's degree in chemistry, microbiology or related degree with a minimum of 20 semester hours in Chemistry or Microbiology. Must have 2 years mass spectrometer or molecular techniques as applicable.

Licensing and Other Requirements

Operate a motor vehicle requiring a valid standard Arizona driver's license with no major driving citations in the last 39 months.

State of Arizona Grade 1 Water and Wastewater Treatment Operator Certification must be obtained within 6 months of hire.

Work occasional weekend and emergency.

SUPERVISION RECEIVED AND EXERCISED

Positions in this classification report to the Laboratory Manager and do not supervise.

WORK ENVIRONMENT/PHYSICAL DEMANDS

The physical demands and work environment characteristics described here are representative of those that must be met by an employee to successfully perform the essential functions of this job or that an employee encounters while performing the essential functions of this job. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

Operates a variety of standard office and laboratory equipment, which requires continuous and repetitive eye, arm or hand movements and the ability to visually distinguish the full range of the color spectrum in order to perform laboratory tests.

This job description does not constitute an employment agreement between the employer and employee and is subject to change by the employer as the needs of the employer and requirements of the job change.